Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Revitalization of the AM Radio Service	)	MB Docket No. 13-249

COMMENTS OF THE AM RADIO PRESERVATION ALLIANCE ON SECOND FURTHER NOTICE OF PROPOSED RULE MAKING

The AM Radio Preservation Alliance Members:

Alpha Media LLC
Beasley Media Group, LLC
Bonneville International Corporation
Cox Media Group, LLC
Cumulus Media Inc.
Entercom Communications Corp.
Family Stations, Inc.
Grand Ole Opry, LLC
Hearst Stations Inc.
Hubbard Radio, LLC
iHeartCommunications, Inc.
NRG License Sub, LLC
Scripps Media, Inc.
Townsquare Media, Inc.
Tribune Broadcasting Company, LLC

February 8, 2019

SUMMARY

The AM Radio Preservation Alliance (the "Alliance" or "AMRPA") respectfully submits these Comments and expert analyses to address proposals contained in the Commission's Second Further Notice of Proposed Rule Making, FCC 18-139, MB Docket No. 13-249 (the "*SFNPRM*"), that would diminish protections against harmful interference for the listeners of Class A AM stations.

The Commission has already undertaken largely consensus-based revitalization efforts to improve AM radio service, including: the relaxation of daytime community coverage; elimination of the nighttime community overage requirement for existing AM stations; repeal of the "ratchet rule"; more flexibility for modulation dependent carrier level control technologies; reduction in AM antenna efficiency standards; fewer regulatory burdens for AM directional antenna arrays; expanding the site locations where FM translators may rebroadcast AM radio stations; and the elimination of main studio requirements for broadcast stations. The Alliance commends the Commission for acting on these consensus reforms.

Furthermore, and again on a largely consensus basis, the Commission conducted four cross-service FM translator filing windows limited to AM stations, with priority to Class C and Class D AM station licensees and permittees, resulting in over 1,000 translator station modifications authorized through the first two windows, and over 1,850 applications for new cross-service FM translators filed in the third and fourth windows. These expanded opportunities for AM stations to employ FM translators have, wisely, boosted the public's exposure to programming by AM stations without risking the introduction of additional interference on the AM band.

In the *SFNPRM*, the Commission asks for specific comments addressing the effect of proposals to limit interference protections to Class A AM stations on the functioning of

the Integrated Public Alert and Warning System ("IPAWS") managed by the Federal Emergency Management Agency ("FEMA") and on the Commission's Emergency Alert System ("EAS"). On this matter the record is already clear: FEMA's IPAWS Program Management Office – which is mandated by Congress to establish and maintain a resilient nationwide emergency communications infrastructure – has stressed in prior comments the critical role of the wide range of the 25 Class A AM Primary Entry Point ("PEP") stations in emergency communications. As explained specifically in those comments, "FEMA has made significant efforts to assure PEP stations have resilient transmission facilities and that they will be available if called upon even if the power grid and most of the country's broadband infrastructure are not functioning properly. Under these circumstances it will be critically important that there is as little interference to PEP station's signals as possible." To adopt any of the *SFNPRM* proposals to increase interference to the reach of Class A AM stations would, as documented here and by prior submissions, increase the likelihood of interference to PEP stations, thereby undermining the Nation's finely-tuned, and highly-invested, public safety and national security communications infrastructure.

The interference-creating proposals now under review by the *SFNPRM* are controversial for good reason: these sweeping changes in interference protections during nighttime, critical hours and daytime hours for Class A AM stations would allow massively more interference to listeners to Class A AM stations than they would create opportunities for theoretical population gains by non-Class A AM stations. The resulting small islands of service within seas of interference will drive more and more listeners from the AM band, precisely the opposite intended goal of the Commission in this proceeding.

Real-world audience data and listener responses submitted in this proceeding establish that Class A AM stations have significant listenership outside their 0.5 mV/m

groundwave contour, both night and day. This record contradicts the engineering consulting firms' claims that Class A AM listenership is non-existent outside the respective 0.5 mV/m groundwave contours. Such inaccurate presumptions must not serve as the predicate for Commission action in this proceeding.

The evidentiary record is further supplemented by the engineering studies supplied with these Comments documenting the destructive interference that would be unleashed on areas currently served and valued by listeners under the nighttime, critical hours and daytime proposals of the *SFNPRM*. Representative Class A AM stations have been studied for the interference impacts of the *SFNPRM* alternatives, as well as the potential gains for non-Class A AM stations. In each case, and in each of the nighttime, critical hours and daytime periods studied, such theoretical gains (which may never materialize with new listeners) would be massively outweighed by the interference permitted under the proposals to existing service areas. Moreover, in many cases, the non-Class A AM stations that could increase power under the *SFNPRM* proposals already have associated FM translators providing service to superior numbers than could be gained with increases by their AM facilities, with the benefit that such populations are served by the FM translators without amassing more interference on the AM band. The Commission should be striving for spectrum efficiency, which is best preserved by maintaining Class A AM interference protections, rather than the inefficient and spectrum-damaging end-result that the *SFNPRM* proposals so demonstrably would cause.

AMRPA continues to oppose changing daytime interference protections for Class B, C and D AM stations to the 2 mV/m daytime contour. AMRPA's prior submissions, incorporated by reference, establish that this proposal would have overall detrimental impacts for Class B, C and D AM stations, contrary to the public interest in preserving and revitalizing AM radio service.

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COMMENTS OF THE AM RADIO PRESERVATION ALLIANCE ON SECOND FURTHER NOTICE OF PROPOSED RULE MAKING

The AM Radio Preservation Alliance (the "Alliance" or "AMRPA") 1/ hereby submits these Comments on revised proposals to decrease interference protections for the listeners of Class A AM stations outlined in the Commission's Second Further Notice of Proposed Rule Making in MB Docket No. 13-249, 2/ which follows on the Commission's Further Notice of Proposed Rule Making in this proceeding. 3/

While the guideposts have been adjusted somewhat in the proposals set out for

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1/ The following members of the Alliance are, directly or indirectly, the licensees of 54 Class A AM stations: Alpha Media LLC; Bonneville International Corporation; Cox Media Group, LLC; Cumulus Media Inc.; Entercom Communications Corp.; Family Stations, Inc.; Grand Ole Opry, LLC; Hearst Stations Inc.; Hubbard Radio, LLC; iHeartCommunications, Inc., as debtor in possession; NRG License Sub, LLC; Townsquare Media, Inc.; and Tribune Broadcasting Company, LLC. In addition, Beasley Media Group, LLC, a licensee of non-Class A AM stations, and Scripps Media, Inc., a former owner of a Class A AM station and a current owner of broadcast television stations, are members of the Alliance.

2/ *Revitalization of the AM Radio Service*, Second Further Notice of Proposed Rule Making, FCC 18-249, MB Docket No. 13-249 (rel. Oct. 5, 2018) ("*SFNPRM*").

3/ *Revitalization of the AM Radio Service*, First Report and Order, Further Notice of Proposed Rule Making, and Notice of Inquiry, 30 FCC Rcd 12145 (2015) ("*AMR First Report and Order*" or "*AMR FNPRM*"). These Comments are timely filed, as the original due date for comments on the *SFNPRM*, January 22, 2019, *see* 83 Fed. Reg. 58,513 (Nov. 20, 2018), was during the suspension of FCC operations due to the partial lapse in Federal government funding. The Commission extended deadlines for filings due between January 8 and February 7, 2019 (with exceptions not relevant here) until February 8, 2019. *See Public Notice*, Revisions to Filing and Other Deadlines Following Resumption of Normal Commission Operations, DA 19-26 (rel. Jan. 29, 2019).

comment in the *SFNPRM* from the *AMR FNPRM*, the alternatives in the *SFNPRM* for nighttime and critical hours would likewise ignore the realities of the physics of skywaves, thereby promoting small pockets of gains in exchange for vastly greater areas of harmful interference, to the detriment of listeners and operators in the entire AM band. Hence, these Comments incorporate by reference the previous Comments, Reply Comments and related filings made by AMRPA in regard to the *AMR FNPRM*, including the still relevant studies therein on Class A AM listening. Those studies already in the record document that failing to protect or account for the skywave signals of Class AM stations, the "Anchor Stations" of the AM Band would: (1) deprive potentially tens of millions of listeners, especially those in remote and American Indian areas, of access to quality programming and emergency weather and other news and information; (2) weaken key links in the chain of the nation's emergency networks; (3) deny listeners access to favored professional and collegiate sports teams carried on Class A AM stations; and (4) undermine the already tenuous economic underpinnings of AM broadcasting. These Comments further validate and expand upon those earlier showings of negative impacts with additional studies tailored to the alternatives set forth in the *SFNPRM* on the three areas of potential impact on Class A AM stations: nighttime hours, critical hours, and daytime hours. 4/

4/ As discussed below, AMRPA also incorporates by reference its prior submissions on the detrimental impacts on the public interest of the proposal to reduce the protected daytime primary service contour for all Class B, C and D AM stations to the 2 mV/m contour.

I. THE COMMISSION HAS EFFECTUATED SIGNIFICANT AND LARGELY CONSENSUS-BASED REVITALIZATION STEPS FOR SERVICE IMPROVEMENTS AND A HEALTHIER ECONOMIC FOUNDATION FOR AM STATION LICENSEES AND SHOULD NOT UNDERMINE THOSE VALUED RESULTS BY UNLEASHING NEW INTERFERENCE ON A BAND ALREADY ENCUMBERED WITH TOO MUCH INTERFERENCE

Since the Commission undertook efforts to strengthen the AM service, thereby advancing the Commission's fundamental goals of localism, competition and diversity in broadcast media, it has enacted multiple, consensus-based reforms that have lessened the burdens on AM station licensees, thereby allowing them the flexibility to better serve the public. Among such reforms undertaken by the Commission have been relaxing daytime community coverage, eliminating the nighttime community overage requirement for existing AM stations, repealing the "ratchet rule," paving the way for wider implementation for modulation dependent carrier level control technologies, and reducing AM antenna efficiency standards. 5/ Another relief considered in the AM Revitalization proceeding – removing main studio requirements – was ultimately adopted for all broadcast stations. 6/

Additionally, in its *AMR First Report and Order*, the Commission set into a motion – again on a largely consensus basis – a key component of the AM revitalization effort: opening a series of four filing windows limited to AM licensees and permittees, to promote the greater use of FM translators to rebroadcast AM stations. 7/ The first two filing windows were

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5/ *See AMR First Report and Order.* The Commission also reduced several regulatory burdens on the licensees of AM directional antenna arrays as part of its AM Revitalization efforts. *See Revitalization of the AM Radio Service*, Third Report and Order, 32 FCC Rcd 7736 (2017).

6/ *See Elimination of Main Studio Rule, Report and Order,* 32 FCC Rcd. 8158 (2017).

7/ *See AMR First Report and Order,* 30 FCC Rcd at 12150-54 [¶¶ 12-17].

[Footnote continued]

for modifications and/or relocations of existing FM translator authorizations, with the first window open to only Class C and Class D AM licensees or permittees, 8/ and the second window open to any newly participating AM licensees/permittee of any class. 9/ The third and fourth windows were for new FM translator construction permits, with again, the first round open to only Class C and Class D AM station licensees or permittees wishing to file an application to establish a new cross-service FM translator to re-transmit its AM station signal full-time who had not participated in the modification windows, 10/ and the second round open to all AM station licensees or permittees not participating in earlier windows. 11/ Moreover, in February 2017, the Commission expanded the site locations where FM translators could rebroadcast AM radio stations, giving greater flexibility for an AM station to place a rebroadcasting FM translator in a location where it will better serve its AM station's listeners. 12/

The cross-service FM translator windows limited to AM stations were an

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8/ *See Public Notice*, Media Bureau Announces Filing Dates and Procedures for AM Station Filing Window for FM Translator Modifications and Availability of FM Translator Technical Tools, 30 FCC Rcd. 14690 (Med. Bur. 2015).

9/ *See Public Notice*, Media Bureau Advises AM Radio and FM Translator Licensees and Permittees that Second AM Station Filing Window for FM Translator Modifications Will Open on July 29, 2016, 31 FCC Rcd. 7765 (Med. Bur. 2016).

10/ *See Public Notice*, Filing Instructions for Cross-Service FM Translator Auction Filing Window for AM Broadcasters to be Open July 26 – August 2, 2017, 32 FCC Rcd. 4663 (Med. Bur./Wireless Tel. Bur. 2017).

11/ *See Public Notice*, Filing Instructions for Second Cross-Service FM Translator Auction Filing Window For AM Broadcasters (Auction 100) to be Open January 25 – January 31, 2018 (32 FCC Rcd. 10173, (Med. Bur./Wireless Tel. Bur. 2017).

12/ *See Revitalization of the AM Radio Service*, Second Report and Order, 32 FCC Rcd 1724 (2017) ("*AMR Second Report and Order*").

[Footnote continued]

outstanding success. Pursuant to the first two windows, the Commission authorized over 1,000 translator station modifications, representing more than 90 percent of the applications received, to relocate FM translators to improved locations to rebroadcast primary AM stations. 13/ Over 1,850 applications for new cross-service FM translators were filed in the third and fourth windows. 14/

The beauty of the cross-service FM translator initiatives undertaken by the Commission is they increased the exposure of the public to programming by AM stations, but without additional interference on the AM band. The industry's widespread support for these initiatives is a reflection of the Commission's achieving this important balance.

With these consensus-based reforms and FM translator windows, the Commission has already accomplished much towards its AM revitalization goals. The remaining proposals now subject to the *SFNPRM* are highly controversial for a reason – they would promote more interference and less reception of AM signals. A recent survey of the radio listening habits of randomly-selected regular radio listeners proves the point that interference drives away listeners: 81% of listeners would find another radio station if the audio could not be heard clearly. 15/ The Commission should proceed with extreme caution before imposing additional interference burdens on the AM band and its current listeners.

13/ *See* FCC News, Final FM Translator Window For AM Stations Closes, Action is Commission's Most Recent Effort to Assist AM Broadcasters (Feb. 2, 2018).

14/ *See id.*

15/ *See* Nielsen's At Home-near Home Listening Study, The Risk of Signal Interference, at 16-19 (July 2018) (filed in MB Docket No. 18-119 with the Comments of Beasley Media Group, LLC, *et al.*, and incorporated by reference herein). This survey of the radio listening habits of 1,000 U.S. radio listeners aged 18 and over who listened to radio two or more hours in the prior week (randomly-selected from prior Nielsen panelists) was in the context of interference on the FM band, yet its findings are relevant to all radio listening.

II. CLASS A AM STATIONS PLAY A VITAL ROLE IN THE NATION'S PUBLIC SAFETY AND NATIONAL SECURITY COMMUNICATIONS INFRASTRUCTURE, WHICH WOULD BE JEOPARDIZED BY INCREASING INTERFERENCE TO CLASS A AM STATIONS

Rightfully recognizing the critical importance of the matter, in the *SFNPRM*, the Commission asks for specific comments addressing the effect of the proposals to limit interference protections to Class A AM stations on the functioning of the Integrated Public Alert and Warning System ("IPAWS") managed by the Federal Emergency Management Agency ("FEMA") and on the Commission's Emergency Alert System ("EAS"). 16/

The Commission observes that AMRPA has pointed to the vital role that Class A AM stations have played in prior emergencies, such as Hurricane Katrina. 17/ Class A AM stations continue to fulfill their vital role in response to emergencies, natural and otherwise, that our Nation faces. Class A AM Station WBZ, Boston, shared a Peabody Award with Station WBZ-TV for coverage of the 2013 Boston Marathon bombing, with WBZ(AM) airing wall-to-wall coverage of the bombing scene and manhunt after the explosions, providing to listeners hour after hour of "wide-ranging, enterprising coverage of the casualties, the suspects and the intense, nerve-wracking manhunt." 18/ Most recently, Class A AM stations have kept residents informed of the ever-shifting dangers of the Southern California Woolsey and Hill Fires and the Northern California Camp Fire, including wall-to-wall coverage of weather, wind and traffic conditions, as well as mandatory evacuation notices and options for shelters for displaced

16/ *See SFNPRM* at ¶ 14.

17/ *See id.* at ¶ 5.

18/ *See* Peabody Awards, Coverage of Boston Marathon Bombings (WBZ-TV, Boston, and WBZ Newsradio 1030) at http://www.peabodyawards.com/award-profile/coverage-of-boston-marathon-bombings-wbz-tv-boston-and-wbz-newsradio-1030.

[Footnote continued]

residents. 19/

The Commission also acknowledges that 25 Class A AM stations are Primary Entry Points ("PEPs") for IPAWS, 22 of which have been outfitted by FEMA with backup generators and increased fuel capacities, and 10 of which have been given electromagnetic pulse-resistant backup facilities. 20/ Indeed, FEMA's IPAWS Program Management Office stresses the critical role of the wide range of Class A AM PEP stations in emergency communications in comments to the Commission, stating that "FEMA has made significant efforts to assure PEP stations have resilient transmission facilities and that they will be available if called upon even if the power grid and most of the country's broadband infrastructure are not functioning properly. Under these circumstances it will be critically important that there is as little interference to PEP station's signals as possible." 21/ FEMA emphasizes IPAWS's reliance on Class A AM PEP stations: "Twenty five PEP stations are Class A AM stations with significant nighttime skywave service beyond the normally reported groundwave signal. In MB Docket No. 13-249 *Revitalization of the AM Radio Service* the Commission is currently evaluating a proposal to

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19/ *See* Inside Radio, As Fires Rage, Cali Radio Stations Deliver Essential Reports (Nov. 13, 2018) (detailing extensive coverage of the Woolsey, Hill and Camp Fires by, *inter alia*, Class A AM stations KFI and KNX, Los Angeles, and KFBK, Sacramento) at http://www.insideradio.com/as-fires-rage-cali-radio-stations-deliver-essential-reports/article_8c3f7a6e-e71a-11e8-9b03-43f9e1a3990e.html.

20/ *See SFNPRM* at ¶ 5. Moreover, thirty Class A AM stations serve as a Local Primary One, or "LP-1" station, which "acts as a key EAS monitoring source," and is required to "monitor its regional PEP station and a back-up source for Presidential messages." *See* AMRPA *FNPRM* Comments at 20 and Exhibit L. Other commenters stressing the irreplaceable role of Class A AM stations in emergency communications include: Alfred Kenyon (Kenyon) *FNPRM* Comments at 1-2; Allen Gilliard III *FNPRM* Comments at 1; and Cohen, Dippell and Everist *FNPRM* Comments at 3-4.

21/ FEMA IPAWS Program Management Office Comments at 2 (Jun. 8, 2016) ("IPAWS *FNPRM* Comments").

[Footnote continued]

lower co-channel skywave protection to Class A AM stations. This proposal, if enacted, will have the effect of creating extended areas where stations with which FEMA does not have direct communications pathways may cause interference to currently protected skywave service areas." 22/

FEMA's IPAWS Program Management Office also explains why emergency circumstances would place extra reliance on the notification system it has carefully planned and supported with resilient back-up equipment: "any use of the PEP system for an actual alert will most likely occur under the direst of circumstances when broadcast networks and other means of widespread communication may not be available to the President." 23/ FEMA also clarifies how non-PEP stations interfering with the Class A AM PEP could have a harmful effect: "These stations, while serving their local area with their own commercially robust facilities, may or may not receive a Presidential message for relay as they most likely depend on a relay of the Presidential message through one or more stations from a PEP source. Thus, due to this newly proposed interference, the reach of a Presidential message at a critical time would be diminished." 24/ In conclusion, "FEMA urges the FCC not to authorize reduced protection to Class A AM skywave service." 25/

22/ *Id*.

23/ *Id*.

24/ *Id*. Respectfully then, it is wishful thinking that FEMA and/or the FCC, in the scramble to ensure Presidential communications to the nation during an episode of the direst of circumstances, could effectively coordinate *and get the message out to multitudes of non-Class A AM stations that may not even have direct communications pathways* to cease their interfering operations under the statue giving suspension powers to the President. *See* 47 U.S.C. § 606(c) (upon Presidential proclamation that there exists war, threat of war, state of public peril, disaster or other national emergencies, President may cause the closing of radio stations). *Cf.* du Treil, Lundin & Rackley, Inc. ("dLR") *SFNPRM* Comments at 4-5.

25/ IPAWS *FNPRM* Comments at 2.

FEMA's strong support for maintaining Class A AM service without additional interference, while focused on the nighttime skywave proposal suggested in the *FNPRM*, logically extends to the modified nighttime, critical hours and daytime proposals in the *SFNPRM.* The unintended negative consequences of imposing new interference on Class A AM service was underscored by Alfred S. Kenyon, III, a Project Manager and Engineer with FEMA's IPAWS Program Management Office: "Class A AM PEP stations are a unique resource. Many PEP stations are equipped to survive events ranging from solar flare to a man-made [electromagnetic pulse] event either of which could damage the power grid or cripple many alternative information sources such as broadband through disruption of first and last mile connectivity. Increasing the authorized noise and interference level on Class A channels will cause significant service reductions to the Class A AM PEP stations while only offering limited interference free service gains for stations which might benefit from the proposed change to Class A skywave protections." 26/

In the *SFNPRM*, the Commission states: "We also seek comment on whether our statutory authority imposes any limitations on implementation of these proposals, and whether such implementation is consistent with the public interest." 27/ The Commission must also be cognizant that any reductions in the interference protections of Class A AM stations not undermine Congressional goals expressed through an interrelated statutory authority: the Integrated Public Alert and Warning System Modernization Act of 2015 (the "IPAWS Modernization Act"). 28/

26/ *See* Kenyon *FNPRM* Comments at 2.

27/ *See SFNPRM* at¶ 13.

28/ Public Law 114-143 (114th Congress) (Apr. 11, 2016).

With the IPAWS Modernization Act, Congress directed FEMA to modernize the IPAWS system to ensure that the President can under "all conditions," "alert and warn the civilian population in areas endangered by natural disasters, acts of terrorism, and other man-made disasters or threats to public safety." 29/ This Congressional directive to modernize the nation's emergency communications network is being carried out with significant federal investments by FEMA, as highlighted by its announcement in October 2018 of over-$1 million in emergency service upgrades to Class A AM PEP station WLW, Cincinnati, Ohio. 30/ The FCC is obligated to take into account this statutory mandate and FEMA's ongoing and critical reliance, as stated by FEMA in the record of this proceeding, on the current wide reach of Class A AM PEP stations, in considering any *diminution of that reach*.

III. REAL-WORLD, DOCUMENTED CLASS A AM STATION NIGHTTIME SKYWAVE LISTENERS WOULD LOSE VALUED SERVICE DUE TO INTERFERENCE AUTHORIZED BY THE *SFNPRM'*S NIGHTTIME PROPOSALS, WHILE SERVICE GAINS BY UPGRADING STATIONS WOULD BE MINIMAL AND OFTEN ALREADY SERVED BY THEIR CROSS-SERVICE FM TRANSLATORS, AN INEFFICIENT USE OF SPECTRUM

AMRPA, as have others, has already entered into the record in this docket real world evidence of multitudes of current listeners to Class A AM stations' skywave signals, thereby establishing the harm to the public if the *AMR FNPRM*'s proposals were adopted to

29/ *See* IPAWS Modernization Act, Sec. 526(a).

30/ *See* "FEMA, iHeartMedia Partner to Unveil Broadcast Pod" (Oct. 24, 2018) (unveiling of WLW's upgraded emergency broadcasting facility attended by Antwane Johnson, FEMA Director of Continuity Communications and Congressman Steve Chabot) at https://700wlw.iheart.com/content/2018-10-24-gallery-fema-iheartmedia-partner-to-unveil-broadcast-pod/.

[Footnote continued]

reduce nighttime protections to Class A AM stations by eliminating skywave factors. 31/ The Commission's *SFNPRM,* by seeking comments on two alternate nighttime hours proposals, each of which would exempt other AM stations from protecting Class A AM stations' skywave signals, continues down the risky path of creating immense swaths of new interference to existing nighttime Class A AM listeners for the theoretical opportunity by Class B and (mostly) Class D AM stations for expanded or new nighttime service to vastly smaller numbers of potential new listeners that may never materialize. 32/

The premise of consulting engineering firm proponents in favor of replacing protection of each Class A AM station's skywave contour with protection to only the Class A AM station's 0.5 mV/m nighttime groundwave contour (with some variations on the calculation of the interfering signals as reflected in Nighttime Alternatives 1 and 2) is that they do not believe that, in the current noise environment, Class A AM stations are realistically or reliably reaching listeners via their nighttime skywave signals.

31/ *See, e.g.*, Bloomberg Communications Inc. *FNPRM* Reply Comments (engineering studies document substantial interference to listeners of Class A AM Station WBBR, New York, New York, from proposed modifications of skywave and critical hours protections).

32/ Commenters have observed that if the Commission chooses to ignore the impacts of skywave propagation, its regulations may change, but not the laws of physics, with interference being the end result. *See, e.g.,* Kevin Tekel *FNPRM* Comments at 1 ("We have learned from past history that allowing AM stations to increase their nighttime power in an attempt to cut through the interference to serve their local listeners only ends up creating more of that same interference due to skywave propagation, which will continue to exist as a result of the nature of radio wave physics even if the FCC tries to dismiss it as 'sporadic and unreliable'."); Robert A. Meuser *FNPRM* Comments at 2 ("In the case of class A stations, while arguments can be made for or against sky wave protection, sky wave will still exist. In many cases stations operating on class A channels at night will receive very high NIF limits and provide very little coverage for the additional interference created….Degrading class A channels seems to be opposite of the public interest."); Scott Fybush *FNPRM* Comments at 2 ("the laws of physics dictate that at wavelengths in the hundreds of meters, medium-wave signals inevitably carry for hundreds or thousands of miles at night.").

[Footnote continued]

This presumption that skywave service is too spotty or too compromised to draw audiences to Class A AM stations has already been contradicted with the audience data and responses of dedicated skywave listeners entered into the record by AMRPA. For example, Nielsen Audio audience data referenced by AMRPA in prior submissions in this docket establishes that interference zones proposed under the *AMR FNPRM* nighttime proposal – which would have protected the more generous 0.1 mV/m nighttime groundwave contour versus the 0.5 mV/m groundwave contour under consideration in the *SFNPRM* – have more than 450,000 reported Class A AM station listeners. 33/ Nielsen audience surveys cited by AMRPA also establishes that 12,100 Average Quarter-Hour Persons, representing about *8.6 million hours per month of audience listening*, would be subject to disruption in the interference zones to Class A AM stations under the *AMR FNPRM* nighttime proposal. 34/

Additionally, the record of this proceeding is packed with reams of evidence of actual skywave listeners subject to disenfranchisement under the *AMR FNPRM* proposal to eliminate skywave protections to Class A AM stations, including documentation of listening outside the respective Class A AM station's 0.1 mV/m nighttime groundwave contour, 35/ and even greater actual audience response when the dividing line is the respective Class A AM station's 0.5 mV/m groundwave contour. 36/

Further evidence of extensive actual Class A AM skywave audiences, defined as listening outside the 0.5 mV/m nighttime groundwave contour of each of the 57 Class A AM

33/ *See* AMRPA *FNPRM* Comments at 7.

34/ *See id.* at 7-8.

35/ *See id.* at 8-12 and Exhibit E.

36/ AMRPA *FNPRM* Reply Comments at 18-20 and Exhibit R.

[Footnote continued]

stations in the 48 contiguous states, is presented in the attached Declaration. 37/ As explained in the Declaration, the Nielsen Audio National Regional Database, Monday-Sunday 8pm-6am, Persons Age 12+ (Spring 2018), was tapped for nighttime audience data for these 57 Class A AM stations. Measured nighttime audiences were extracted for listening within each Class A AM station's 0.5 mV/m nighttime groundwave contour, and then subtracted from the national data, resulting in the audience associated with skywave listening. 38/

The Nielsen data supplied with the Declaration documents that across all 57 Class A AM stations in the lower 48 states, *the average of AQH listening via skywave reception constitutes 11% of all nighttime listening* and *the average of Cume listening via skywave reception is 10% of all nighttime listening*. This proves that substantial portions of actual, real-world, measured Class A AM nighttime listening would be subject to interference under either of the *SFNPRM's* two alternative options eliminating skywave interference protection for Class A AM station listeners.

Also, as documented by the Nielsen audience data detailed in the Declaration and its attached spreadsheet, skywave reception of Class A AM signals over groundwave reception constitutes even greater percentages of the measured nighttime audience for individual Class A AM stations. Such examples include skywave listening constituting 70% (AQH) of the nighttime audience for WLAC (Nashville, Tennessee), 60% (AQH) of the nighttime audience for

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37/ *See* attached Declaration of Jeff Littlejohn, iHeartMedia (the "Littlejohn Declaration").

38/ *Id.* As explained in the Declaration, because one single groundwave zip code in a county was enough to include the entire county as part of the "Groundwave" audience, the data may *overstate* the audience listening via the station's 0.5 mV/m nighttime groundwave signal and *understate* the audience listening via the station's skywave signal. Note also, for the nine Class A AM stations broadcasting AM-FM simulcasts, the audience data may reflect listening on both services. This simulcast information inflates the size of the audience reported as "Groundwave" but does not inflate the "Skywave" audience. This may lead to a further *underreporting* of the Skywave percentages.

WWVA (Wheeling, West Virginia), 58% (Cume) of the nighttime audience for WSM (the Grand Ole Opry station, Nashville, Tennessee), and 33% (Cume) of the nighttime audience for WRVA (Richmond, Virginia). And Class A AM Station KAAY, Little Rock, Arkansas, primarily reaches its nighttime audience for its religious programming through its skywave signal, with 100% (Cume) of KAAY's nighttime audience measured as coming from skywave reception.

These are not theoretical audiences, they are real-world measured and substantial audiences whom would be forced to tune out their favorite nighttime AM station, if not AM altogether, by the interference that would be unleashed by the adoption of either of the *SFNPRM* proposals to undermine the guarding of the valued skywave reach of Class A AM stations. The presumption of engineering consulting firms that there is no realistic possibility of reliable skywave Class A AM listenership cannot withstand this evidence documenting extensive skywave listenership.

These Comments also provide for the record Engineering Exhibits that examine the impact of the *SFNPRM* options on representative Class A AM stations, including a detailed analysis of the *SFNPRM* option to eliminate, for the lower 48 states, the protection of the 0.5 mV/m-50 percent skywave contour from co-channel stations, substituting instead the 0.5 mV/m nighttime groundwave contour of Class A AM stations as the protected contour. 39/

39/ The Engineering Exhibits here detail the impact on the studied Class A AM stations of "Nighttime Alternative 1." *See SFNPRM* at ¶ 12 ("During nighttime hours, there may be no overlap between a Class A AM station's 0.5 mV/m nighttime groundwave contour and any interfering AM station's 0.025 mV/m 10 percent skywave contour (calculated using the single station method)."). "Nighttime Alternative 2" would provide that "interference may not be increased above the greater of the 0.5 mV/m nighttime groundwave contour or the 50 percent exclusion RSS NIF level (calculated using the multiple station method." *Id*. Based on a sampling analysis, AMRPA has found that Nighttime Alternative 2 generally would authorize *even more interference* to the listeners of Class A AM stations than under Nighttime

[Footnote continued]

By way of example, the Engineering Exhibits analyzing Class A AM Station KDKA, Pittsburgh, Pennsylvania, document a devasting impact on the currently protected nighttime contour of KDKA if Nighttime Alternative 1 was adopted and co-channel Class D stations increased their operating power to the maximums permitted thereby in the direction of KDKA's 0.5 mV/m nighttime groundwave contour. 40/ Specifically, Figure 1-N of the KDKA Engineering Exhibits documents that a massive area (marked by red shading) would be subjected to interference from these co-channel upgrades, amounting to **121,275,964 persons facing new interference, constituting 82.5% of the currently protected KDKA skywave contour**. 41/ Moreover, KDKA is a PEP and an LP-1 station playing a key role in U.S. Government emergency notifications. 42/

In contrast to the imposition of new interference to up to over 121 million persons currently enabled for nighttime service from KDKA, the Class D stations causing this interference would have the opportunity for minimal improvements, whether considered individually or collectively, even if they added nighttime service up to the maximum power

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Alternative 1. *See* Engineering Exhibits for KMOX(AM), St. Louis, Missouri (new nighttime interference within KMOX's 0.5 mV/m-50 % nighttime skywave contour is **75.5%** of that contour under Nighttime Alternative 1 (Figure 1.1-N) and **97.2%** of that contour under Nighttime Alternative 2 (Figure 1.2-N), impacting **91,515,793** and **117,726,092** persons, respectively). Hence, the documented conclusions here of the negative impact on the public interest from the adoption of *SFNPRM* Nighttime Alternative 1 apply with even greater force to *SFNPRM* Nighttime Alternative 2.

40/ *See* Engineering Exhibits for KDKA(AM), Pittsburgh, Pennsylvania, at Figure 1-N ("KDKA Engineering Exhibits").

41/ *See id*.

42/ *See* AMRPA *FNPRM* Comments at 19-20 and Exhibits K and L. Additionally, KDKA is one of the PEP stations equipped by FEMA with back-up communications equipment and power generators. *See id*. at Exhibit K.

[Footnote continued]

limits under Nighttime Alternative 1. 43/ In this example, individual improvements for the impinging Class D stations, coming at the cost of service to KDKA's current protected skywave, are: 4 additional persons for Class D Station WHDD; 2,264 additional persons for Class D Station WCIL; 2,752 additional persons for Class D Station WPEO; and 687 additional persons for Class D Station WRIX; for Class D Station WIBG, there would be zero population gain. 44/ **That is, for potential nighttime service to *collectively 5,707 new persons* (who may not even become new listeners) by five Class D stations, *121,275,964 persons* currently in KDKA's protected zone would be subjected to interference.** This is precisely what is meant when AMRPA and others warn of creating "small islands of service in a sea of interference" in their prior comments in this proceeding, and certainly a textbook example of harm far outweighing any potential good. 45/

Against this grim interference-added outcome from the *SFNPRM* nighttime hours proposals, let us not forget that the Commission has made significant progress on its goal of bolstering the economic foundation and reach of AM stations by enacting other, consensus-based steps growing out of the AM Revitalization docket, as highlighted above. The Commission has seen particular success towards its goal of improving access to audiences of smaller AM stations via the highly productive cross-service FM translator windows, which gave priority to Class D

43/ As explained in the Engineering Exhibits, generally, the impinging Class D AM stations are non-directional. In those few instances where the Class D AM station employs a directional pattern, the presumed Class D AM station power has been limited in the direction of the studied Class A AM station's 0.5 mV/m nighttime groundwave contour and, to avoid complex alternative scenarios, has not been verified for protection limits in other directions.

44/ *See* KDKA Engineering Exhibits at Figures 2-N to 6-N.

45/ *See also* Steven R. Bartholomew *FNPRM* Comments at 2 ("The FCC should not take any action that would adversely impact the ability of these [Class A] AM stations to continue serving their respective markets. Otherwise, one possible end result could be creating small islands of service in a sea of interference.").

and Class C AM stations. As detailed above, through these four AM-applicant only windows, new and/or modified FM translators were authorized to serve as an outlet for the primary AM station's programming, thereby improving service to the public, and enhancing the economic base for the AM station, *without creating new interference on the AM band* that would be disadvantageous to all broadcasters seeking to keep listeners tuning into the AM band.

Indeed, reviewing the representative example of Class A Station KDKA, ***every one of the Class D AM stations*** **that could gain nighttime service under *SFNPRM* Nighttime Alternative 1 – at the cost of new interference to KDKA's skywave reception to the tune of over 121 million persons –** ***has an associated FM translator license or permit that currently gives that Class D station an overnight outlet*** **(as well, of course, a critical hours and daytime outlet)** ***with greater audience reach.***

Specifically, as documented in the FM translator contour maps in the attached KDKA Engineering Exhibits, for Class D Stations WCIL, WPEO, WIBG and WRIX, their associated FM translators already serve (or authorize service) to the area that would be gainable under Nighttime Alternative 1, but with far more persons served by the FM translator than the potentially added nighttime service on the AM band pursuant to the *SFNPRM*. 46/ The relative populations served by the associated FM translator versus the theoretical gain under *SFNPRM* Nighttime Alternative 1 for the Class D AM stations impacting KDKA are tabulated here 47/:

46/ The one exception to this example of the associated FM translator's service area entirely encompassing the potential nighttime gain area is WHDD, where its FM translator serves multiple times more persons than the four-person nighttime gain area under the *SFNPRM* proposal, but to a location slightly to the south.

47/ *See* KDKA Engineering Exhibits at Figures 2-N to 6-N and Summary of FM Translator Studies/KDKA.

Class D AM Station Causing Interference to Class A Station KKDA if Class D Operates with Maximum Power Per Nighttime Alternative 1	FM Translator (License or Permit) Associated with Class D Station	Population Within FM Translator's 60 dBu Contour	Population Within Class D Station's Potential Nighttime Interference Free Contour Under Nighttime Alternative 1
WHDD	W248CZ	13,952	4
WRIX	W284CZ	87,377	687
WCIL	W300DY	54,210	2,264
WPEO	W249CZ	187,746	2,752
WBIG	W267CU	15,124	0
Cumulative Sum:		**358,409**	**5,707**

Another example of the spectrum inefficiency of the *SFNPRM's* nighttime proposals as a means of assisting Class D AM stations – in contrast to the spectrum-wise use of cross-service FM translators – is demonstrated by the Engineering Exhibits for WLAC, Nashville. As detailed in those Exhibits, under *SFNPRM* Nighttime Alternative 1, 13 Class D AM stations could add nighttime service for a cumulative population gain of 74,745 persons. 48/ In return, those Class D operations would cause interference to 93,123,113 persons, constituting 83.6% of WLAC's currently protected 0.5 mV/m-50 % nighttime skywave contour. 49/ **That is, for every *one* additional listener possibly gained by the Class D AM stations, *one thousand, two-hundred and forty-five (1,245)* persons now protected from interference in their**

48/ *See* WLAC Engineering Exhibits at Figures 2-N to 14-N and Summary of FM Translator Studies/WLAC.

49/ *See id*. at Figure 1-N.

[Footnote continued]

nighttime reception of Class A AM Station WLAC would lose that service. That spectrum inefficiency is even more indefensible following a review of the FM translators licensed or permitted to these Class D AM stations. Specifically, 11 of these 13 Class D AM stations hold licenses or permits for associated FM translators. 50/ Most of those FM translators encompass, in whole or part, the respective AM "gain area" for each Class D AM station under *SFNPRM* Nighttime Alternative 1. 51/ **The cumulative population served by these authorized FM translators is 993,398, overwhelmingly greater than the cumulative population "gain" of 74,745 persons under *SFNPRM* Nighttime Alternative 1**. 52/

Even more astounding in its destructiveness to AM reception is the example of LP-1/PEP Station KMOX, St. Louis, Missouri, under *SFNPRM* Nighttime Alternative 1. As noted above, interference from neighboring stations to KMOX's protected skywave contour would constitute **75.5%** of that contour, with **over 91.5 million currently-served persons subject to interference** from these Class D AM operations. 53/ The allowance of this extensive interference to KMOX's currently-served population would be in the service of **40,658 persons potentially gained by all the Class D AM upgrades.** 54/ Proportionally, the exchange is, **for each *single* potential listener possibly gained by the Class D AM stations, *two thousand, two-hundred and fifty (2,250)* currently-served listeners must lose their reception.** Yet, 9 of

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50/ *See id*. at FM translator figures and Summary of FM Translator Studies/WLAC.

51/ *See id.*

52/ *See id.*

53/ *See supra* n.39.

54/ *See* KMOX Engineering Exhibits at Figures 2-N to 11-N and Summary of FM Translator Studies/KMOX.

[Footnote continued]

these 10 upgrading Class D AM stations have licensed or permitted FM translators serving way more cumulative population – **1,200,545 persons**– than the mere **40,658 persons potentially gained by all these Class D AM upgrades**: 55/

Class D AM Station Causing Interference to Class A Station KMOX if Class D Operates with Maximum Power Per Nighttime Alternative 1	**FM Translator (License or Permit) Associated with Class D Station**	**Population Within FM Translator's 60 dBu Contour**	**Population Within Class D Station's Potential Nighttime Interference Free Contour Under Nighttime Alternative 1**
WHOG	W228EK	56,233	61
WKQW	W281CA	27,444	348
WVLZ (formerly WKCE)	W246DH	38,159	9
WXJO	W283CT	160,546	1,552
WTWZ	W273CY	295,126	136
KETU	K250BN	278,282	263
WBBF	W255DH	134,072	34,480
WSME	W246CJ	104,124	1,599
KCRN (formerly KLIM)	K283AS	106,559	1,838
WEAF	N/A	N/A	372
Cumulative Sum:		**1,200,545**	**40,658**

Similar results of very modest improvements by Class D stations causing exponentially more interference to current skywave listeners of Class A AM stations are documented in the other Engineering Exhibits attached here for the studied Class A AM Stations. 56/ Likewise, in every studied instance, the majority of the Class D stations that could

55/ *See id.*

56/ *See* WWVA Engineering Exhibits (**Class D potential gain of 31,365 persons results in**

[Footnote continued]

take advantage of nighttime upgrades already have an authorization for an FM translator that reaches far more persons, during all time periods. 57/

Rather than equitably "redistributing the wealth" (even if that were a fair goal given that each broadcaster's investment in a Class A AM station far outweighs the investment in an AM station known from the outset to have more limited capabilities), the nighttime interference options set forth for comment in the *SFNPRM* would undermine, rather than advance, the public good. It does not serve the public good to further burden the AM band with such widespread interference, for so little, theoretical gain.

IV. TO ELIMINATE OR DIMINISH CRITICAL HOURS PROTECTIONS WOULD IGNORE THE LAWS OF PHYSICS AND SUBJECT AM BAND LISTENERS TO MORE INTERFERENCE, DRIVING THEM OFF THE AM BAND

By the *SFNPRM*, the Commission solicits comments on whether to eliminate or diminish the critical hours protections to Class A AM stations, laying out two critical hours alternatives for comment: Alternative 1, "[d]uring critical hours, Class A AM stations are

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Class A loss of 65,713,349 persons, a loss of 2,095 current persons for each potential one gained); WBT Engineering Exhibits (**Class D potential gain of 58,009 persons results in Class A loss of 79,523,475 persons**, a loss of 1,370 current persons for each potential one gained); WBAL Engineering Exhibits (**Class D potential gain of 186,309 persons results in Class A loss of 14,550,428 persons**, a loss of 78 current persons for each potential one gained); KWKH Engineering Exhibits (**Class D potential gain of 45,353 persons results in Class A loss of 1,802,900 persons**, a loss of 39.8 current persons for each potential one gained).

57/ *See* WBT Engineering Exhibits (Class D potential gain of 58,009 persons; **authorized FM translators serve 1,437,545 persons, which is 24.8x the population**); KWKH Engineering Exhibits (Class D potential gain of 45,353 persons; **authorized FM translators serve 399,393 persons, which is 8.8x the population**); WWVA Engineering Exhibits (Class D potential gain of 31,365 persons; **authorized FM translators serve 275,201 persons, which is 8.8x the population**); WBAL Engineering Exhibits (Class D potential gain of 186,309 persons; **authorized FM translators serve 800,330 persons, which is 4.3x the population**).

[Footnote continued]

afforded no protection from other AM stations, as proposed in the *AMR NPRM*"; and Alternative 2, "[d]uring critical hours, Class A AM stations are protected to their 0.5 mV/m groundwave contour." 58/

In regard to Critical Hours Alternative 1, AMRPA has already documented in this proceeding, with empirical studies, that the elimination of critical hours protections for Class A AM stations would only serve to create immediate, unbearable interference in the AM band, not only "at great distances from the metropolitan area that constitutes the station's primary service area," but also to close-in areas served by the Class A AM stations' groundwave signals. 59/ Many commenters agree that it would be a further interference burden on the AM band for the Commission to remove altogether critical hours protections for Class A AM stations. 60/

In addition to the studies submitted by AMRPA in previous submissions in this docket, the Engineering Exhibits here provide further concrete examples of the increased interference that would be unleashed on the reception of Class A AM signals, both within the station's 0.1 mV/m daytime groundwave contour and the more restrictive 0.5 mV/m daytime groundwave contour, assuming nearby stations were permitted to operate at daytime power

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58/ *See SFNPRM* at ¶ 12. Pursuant to Critical Hours Alternative 2, the right-hand side axis descriptions on Figures 9, 10 and 11 of 47 C.F.R. Section 73.190 would be amended to reference "Distance from 0.5 mV/m Contour in Miles" in lieu "Distance from 0.1 mV/m Contour in Miles." *See id*. at Appendix A, Item 10.

59/ *See* AMRPA *FNPRM* Comments at 24-33 and Exhibit P.

60/ *See, e.g.,* dLR *FNPRM* Reply Comments at 1, 11 ("We agree with the Alliance that critical hours protection should not be eliminated for Class A stations."); Hatfield & Dawson Consulting Engineers, LLC *FNPRM* Reply Comments at 1 ("Critical hours protection of class A stations should not be eliminated, but should be modified…."); Carl T. Jones Corporation, *FNPRM* Comments at 3-4 (engineering consulting firm opposes *FNPRM* proposal to eliminate Critical Hours protection entirely).

[Footnote continued]

during critical hours periods, per Alternative 1. 61/ For example, the Engineering Exhibits for WBAL, Baltimore, Maryland (an LP-1 and a PEP station equipped by FEMA with back-up communications equipment and power generators), document ever increasing zones of interference within, at first, WBAL's 0.1 mV/m daytime groundwave contour, and, increasingly as it gets closer to sunset, within its 0.5 mV/m daytime groundwave contour, assuming surrounding stations are exempted from critical hours power reductions. Specifically, for WBAL, at one hour prior to sunset, 300,314 persons (or 1.4% of the 0.1 mV/m groundwave contour population) would be subjected to interference in their reception of WBAL from such nearby continued daytime operations without critical hours power reductions. 62/ At one-half hour prior to sunset, with the nearby stations maintaining daytime power, 10,475,410 persons within WBAL's 0.1 mV/m groundwave contour (49.3% of the total contour population) would experience interference. 63/ Moreover, at the one-half hour mark, without critical hours limits, 253,979 persons within WBAL's *0.5 mV/m* groundwave contour would have their reception of WBAL disrupted by interference. 64/ Without critical hours power reductions, the situation worsens further at one-quarter hour before sunset. 65/ As documented in the WBAL Engineering Exhibits, **14,622,912 persons (68.8%) within WBAL's 0.1 mV/m groundwave contour would be subjected to interference; and 37.7% of WBAL's 0.5 mV/m groundwave**

61/ The Engineering Exhibits critical hours analysis here employs skywave diurnal factors (47 C.F.R. Section 73.190, Figure 13) for the time frames of (i) one hour prior to sunset (SS-1), (ii) one-half hour prior to sunset (SS-0.5), and (iii) one-quarter hour prior to sunset (SS-0.25).

62/ *See* WBAL Engineering Exhibits at Figure 1.1-C.

63/ *See id*. at Figure 1.2-C.

64/ *See id*.

65/ *See id*. at Figure 1.3-C.

[Footnote continued]

contour would receive interference, affecting 4,016,441 persons. 66/

SFNPRM Critical Hours Alternative 2 likewise will negatively impact the public by authorizing interference to the receipt of Station WBAL. The attached Engineering Exhibits document that interference to the receipt of the WBAL signal from nearby stations adjusting their critical hours power upwards as would be permitted by Critical Hours Alternative 2 will be evident at one-half hour prior to sunset, with 5,518,905 persons within WBAL's 0.1 mV/m groundwave contour (26% of the total 0.1 mV/m contour population) experiencing interference. 67/ The interference nearly doubles at one-quarter hour before sunset under Critical Hours Alternative 2, with **10,845,097 persons (51% of the total 0.1 mV/m contour population) blocked from receiving WBAL by neighboring critical hours power increases**. 68/

Another illustrative example of the adverse impact of both of the Critical Hours Alternatives is documented in the Engineering Exhibits for KWKH, Shreveport, Louisiana (also a Class A AM station designated as an LP-1 and a PEP station equipped by FEMA with back-up communications equipment and power generators). Under Critical Hours Alternative 1 (no critical hours powering down from daytime operations), huge populations within KWKH's 0.1 mV/m groundwave contour would be subject to immediate interference from neighboring Class D stations not powering down: 49,574 persons (0.6% within the 0.1 mV/m contour) at one

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66/ *See id*.

67/ *See id*. at Figure 2.2-C.

68/ *See id*. at Figure 2.3-C. Moreover, at this time period, *314,669 persons within WBAL's 0.5 mV/m groundwave contour* would receive interference under Critical Hours Alternative 2, *see id*., notwithstanding that the proposal's intent would be to protect that contour from interference.

[Footnote continued]

hour prior to sunset; 6,353,373 persons (77% within the 0.1 mV/m contour) at one-half hour prior to sunset; and **6,990,944 persons (84.7% within the 0.1 mV/m contour) at one-quarter hour before sunset**. 69/ Under Critical Hours Alternative 2 (changing the reference distance under the Section 73.190 critical hours Figures from the 0.1 mV/m contour to the 0.5 mV/m contour), interference to KWKH begins at one-half hour before sunset, with 1,695,120 persons now within KWKH's 0.1 mV/m groundwave contour (20.5% of that population) subject to immediate interference from Class D stations not turning down their daytime powers as much as now required. 70/ At one-quarter hour before sunset, under Critical Hours Alternative 2, the **interference within KWKH's 0.1 mV/m groundwave contour rises steeply to 6,101,970 persons, constituting 73.9% of KWKH's 0.1 mV/m contour population**. 71/

The other representative Class A AM stations studied here show similarly harsh losses to their current critical hours audiences, with worst case (one-quarter hour before sunset) population losses under Critical Hours Alternative 1 of: **71.8%** (WBT, Charlotte, NC), **67.4%** (WWVA, Wheeling, WV), **54.3%** (KMOX, St. Louis, MO), **51.2%** (WLAC, Nashville, TN), and **33.8%** (KDKA, Pittsburgh, PA). 72/ The worst case (one-quarter hour before sunset) population losses under Critical Hours Alternative 2 are only slightly less onerous: **63%** (WBT),

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69/ *See KWKH* Engineering Exhibits at Figures 1.1-C to 1.3-C. Critical Hours Alternative 1 also would impact KWKH's 0.5 mV/m groundwave contour population, with new interference to 44,904 persons (2.5% within the 0.5 mV/m contour) at one-half hour prior to sunset, and 540,234 persons (29.9% within the 0.5 mV/m contour) at one-quarter hour before sunset. *See id*. at Figures 1.2-C, 1.3-C.

70/ *See id.* at Figure 2.2-C.

71/ *See id.* at Figure 2.3-C.

72/ *See* Engineering Exhibits.

[Footnote continued]

60.4% (WWVA), **37.9%** (KMOX), **44.9%** (WLAC), and **32.3%** (KDKA). 73/

To make matters worse, either of the *SFNPRM* Critical Hours proposals, if adopted, could be implemented nearly instantaneously by neighboring non-Class A AM stations, causing immediate widespread interference on the AM band. That is, all the interfering stations need to do, under Critical Hours Alternative 1, is to just keep the currently authorized daytime power on longer, and, under Critical Hours Alternative 2, to just adjust the power dial on the station's transmitter according to the power permitted by the modified Critical Hours Figure. Clearly, the fact-based record here cautions against the adoption of the *SFNPRM* proposal to eliminate critical hours protection for Class A AM stations, as set forth in Critical Hours Alternative 1, as well as the reduction in critical hours protections as set forth in *SFNPRM* Critical Hours Alternative 2.

V. FAILING TO PROTECT CLASS A AM STATION'S 0.1 MV/M DAYTIME GROUNDWAVE CONTOUR WOULD ELIMINATE MASSIVE AMOUNTS OF CURRENT AM SERVICE FOR LITTLE GAIN, AN INEFFICIENT USE OF THE SPECTRUM

The Commission in the *SFNPRM* solicits comments on the proposal to change the daytime hours protection for Class A AM stations to protect the station's 0.5 mV/m daytime groundwave contour from co-channel stations, in lieu of the current co-channel protection to the Class A AM station's 0.1 mV/m daytime groundwave contour. 74/

73/ *See id*. Nor, due to the idiosyncrasies of the Section 73.190 Figures, does Critical Hours Alternative 2 necessarily fully "protect" each Class A AM station's 0.5 mV/m groundwave contour throughout the period. For example, under Critical Hours Alternative 2, at one-quarter hour before sunset, 6.6% of the population within WWVA's 0.5 mV/m groundwave contour would be subject to interference, as would 3% of WBAL's and 2.8% of WLAC's respective 0.5 mV/m groundwave contour populations. *See id*.

74/ *See SFNPRM* at ¶ 12. Consequently, under this proposal, Class A AM stations would be

[Footnote continued]

Like the wrong assumptions regarding listenership in overnight hours, proponents of the restriction of daytime protections to just the Class A AM's 0.5 mV/m daytime groundwave contour are mistaken that Class A AM station listeners are illusory outside this contour. Nielsen Audio data for daytime listening documents ***actual, current listening to Class A AM stations outside the studied stations' 0.5 mV/m daytime groundwave contour***, again contradicting the belief by engineering consultants that such listening is not possible. 75/ By segregating Nielsen Audio daytime audience data for all 57 Class A AM stations in the lower 48 states by where the listener's county is in relation to the station's 0.5 mV/m daytime groundwave contour, nearly all the Class A AM stations have documented daytime listening that is wholly or partially outside each station's 0.5 mV/m daytime groundwave contour. 76/

One such Class A AM station – KAAY, Little Rock, Arkansas – **is measured with 34.8% of all daytime listening as wholly outside its 0.5 mV/m daytime groundwave contour**. 77/ When adding in audience data for counties that straddle WLAC's 0.5 mV/m daytime groundwave contour, **up to 35.9% of all of KAAY's daytime audience may be outside that zone**. 78/ Following closely behind, WRVA, Richmond, Virginia, logs **34% of its daytime listening in counties wholly or partially outside its 0.5 mV/m daytime groundwave**

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protected to their 0.5 mV/m daytime groundwave contour from both co-channel and first-adjacent channel stations. *Id.*

75/ *See* Littlejohn Declaration and chart of Weekly Cume P12+, M-Su 6a-7p (Source: Nielsen NRD, Spring 2018) ("Nielsen Daytime Class A AM Listening").

76/ *See id.*

77/ *See id.*

78/ *See id.*

[Footnote continued]

contour. 79/

Significant measured daytime listening substantiated by this Nielsen data goes further: **12 Class A AM stations have daytime listening exceeding 20%** in counties wholly/partially outside their respective 0.5 mV/m daytime groundwave contour, 80/ **11 additional Class A AM stations have such daytime listening at or exceeding 11%** of all daytime listening, **for a total of 23 Class A AM stations at or above 11%,** 81/ and at the measure of **3% or greater of daytime listening in counties wholly/partially outside the station's 0.5 mV/m daytime groundwave contour, 51 Class A AM stations exceed that level.** 82/

Again, these are not illusory or wishful-thinking listeners, this listenership data is based on actual, measured listeners by Nielsen, the audience measurement source utilized by the broadcast industry as well as the Commission. 83/ Clearly, restricting daytime interference protections to each Class A AM station's 0.5 mV/m daytime groundwave contour, as proposed in the *SFNPRM*, risks losing these hard-won actual listeners to newly authorized interference.

The Engineering Exhibits here analyze the *SFNPRM's* proposed daytime reduction in interference protection for several representative Class A AM stations, along with the nearby Class D stations which could, under this proposal, increase power in the direction of

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79/ *See id.*

80/ *See id*. (Stations KAAY, WRVA, KFBK, KSL, KOMO, WSM, KFI, WFED, WBBR, KXEL, WLAC, WFME).

81/ *See id*. (additional Stations WBZ, WCBS, KSTP, WWVA, KNX, WOR, WFAN, WBT, WOAI, WCCO, WABC).

82/ *See id*. (additional Stations WSB, WWKB, KNBR, KOA, WLS, WTIC, KGO, KIRO, WCKY, KEX, WPHT, WWL, WGY, WHAM, WBAL, WGN, KYW, WBAP, WMVP, KWKH, WHO, WJR, KFAQ, KDKA, WTAM, WBBM, KMOX, WLW).

83/ *See, e.g.,* 47 C.F.R. §§ 73.3536, 73.3555 (referencing Nielsen Media Research).

the studied Class A AM stations. In each case, the Engineering Exhibits show that, by multiple factors, many more persons with current AM service would be subject to interference, in contrast to the modest populations gained in the direction of the studied Class A AM station by the stations increasing power.

For example, in regard to Class A AM Station KWKH, Shreveport, Louisiana, four adjacent Class D AM stations, operating under such a daytime rule change with maximum power in the direction of KWKH, would cause **interference to 5,813,685 persons** within KWKH's currently protected 0.1 mV/m daytime groundwave contour. 84/ That represents **70.4% of the currently protected daytime population that would suffer interference** from the power increases of these four nearby stations. 85/ Yet, as detailed in the KWKH Engineering Exhibits, the potential gains in the direction of KWKH by these five neighboring stations collectively total 335,167 persons, hardly outweighing the 5,813,685 persons to be lost by KWKH to new interference. 86/ **Put another way, for every *one person* potentially gained by the neighboring Class D stations in the direction of KWKH, *17 persons* currently-served could no longer listen to KWKH during daytime hours due to interference.** Yet another spectrum-inefficient case of small islands of service within a colossal sea of new interference.

Another example is Class A AM Station WWVA, Wheeling, West Virginia,

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84/ *See* KWKH Engineering Exhibits at Figure 1-D.

85/ *See id*.

86/ *See* KWKH Engineering Exhibits at Figures 2-D to 5-D. These Figures document the potential daytime population gain – solely in the direction of the studied Class A AM station (here, KWKH) as other stations may limit power gains in other directions – assuming the daytime protection to only the 0.5 mV/m groundwave contour was adopted as proposed in the *SFNPRM.*

[Footnote continued]

where three nearby Class D AM stations, if operating under the proposed daytime rule change with maximum power in the direction of WWVA, would **impose interference on 4,755,867 persons within WWVA's currently protected 0.1 mV/m daytime groundwave contour, constituting 41.8% of the contour's population**. 87/ Yet, the potential gains in the direction of WWVA by these three neighboring stations collectively total 245,831, so that over **19 persons presently served during the daytime by WWVA would lose service for every one person potentially gaining service** in the direction of WWVA from the three neighboring stations. 88/

This lopsided harm to multitudes of persons currently served by Class A AM stations for potential minor gains by Class D stations under the *SFNPRM* daytime proposal is seen in the other representative Class A AM stations studied here: **4,268,297 persons lost by WBT**, Charlotte (47.9% of the 0.1 mV/m contour population), for 256,473 potential gain in the direction of WBT, an **16.6/1 lost/gain ratio**; **2,860,373 persons lost by KMOX**, St. Louis (33.4% of the 0.1 mV/m contour population), for 434,606 potential gain in the direction of KMOX, a **6.6/1 lost/gain ratio**; **1,984,602 persons lost by KDKA**, Pittsburgh (16.5% of the 0.1 mV/m contour population), for 343,950 potential gain in the direction of KDKA, a **5.8/1 lost/gain ratio**; **1,037,110 persons lost by WBAL**, Baltimore (4.9% of the 0.1 mV/m contour population), for 446,198 potential gain in the direction of WBAL, a **2.3/1 lost/gain ratio**; and **826,117 persons lost by WLAC**, Nashville (22.2% of the 0.1 mV/m contour population), for 531,522 potential gain in the direction of WLAC, a **1.6/1 lost/gain ratio**. 89/

87/ *See* WWVA Engineering Exhibits at Figure 1-D.

88/ *See id*. at Figures 2-D to 4-D.

89/ *See* Engineering Exhibits.

The Commission should be striving for spectrum efficiency, which is best preserved by maintaining Class A AM interference protections, rather than the inefficient and spectrum-damaging end-result that the *SFNPRM* proposals so demonstrably would cause.

VI. THE RECORD SUPPORTS REJECTION OF THE DAYTIME CLASS B, C AND D PROPOSAL TO PROTECT ONLY TO THE 2 MV/M CONTOUR

In the *SFNPRM*, the Commission asked whether commenters would revise their previously submitted comments on the proposals of the *AMR FNPRM* to change the daytime protection rules for Class B, C, and D AM stations, including the proposal to reduce the protected daytime primary service contour for all Class B, C and D AM stations to the 2 mV/m contour. 90/ AMRPA stands by its prior comments in opposition to reducing the protected daytime primary service contour to the 2 mV/m for Class B, C and D AM stations, and hereby incorporates by reference its prior submissions on this subject, and in particular, the studies at Exhibit S submitted with AMRPA's Reply Comments on the *FNPRM*.

These illustrative studies demonstrate that under the 2 mV/m daytime contour proposal, Class B, C and D AM stations will be faced with high implementation and operating costs for power increases merely to *partially* stave off encroaching signals, with the listening public being deluged with *significantly more, not less, interference* on the AM band. 91/ As was

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90/ *See SFNPRM* at ¶¶ 15-16.

91/ Much ado was made – by proponents of the change to the 2 mV/m contour for daytime Class B, C and D AM stations – that AMRPA's initial studies on the detrimental impact of this proposal (filed with AMRPA's Comments at Exhibit Q) were based on prohibited contour overlaps instead of desired-to-undesired signal ratios. Notwithstanding that using prohibited contour overlaps is consistent with the Commission's definition of interference, and thus was an appropriate study premise, AMRPA met this concern *by employing in studies filed at Exhibit S to its Reply exactly what the critics stated was the proper measure*: *ratios of desired-to-undesired signals as less than the level specified by 47 C.F.R. Section 73.182(r).* As was explained in

[Footnote continued]

demonstrated by AMRPA's studies, the end result would be a lose-lose-lose-lose situation whereby an upgrading station loses from increased costs and increased received interference, its neighbors lose, even if they upgrade, due to increased interference, the public loses from increased signal interference to their favored stations, and the AM band loses from the departure of listeners fed up with more interference.

VII. CONCLUSION

To date, the Commission has enacted significant reforms and initiatives to revitalize AM radio service on a largely consensus basis, in contrast to the controversial, interference-causing proposals set out for comment in the *SFNPRM*. Contradicting the presumptions of proponents for decreasing interference protections for Class A AM stations, the real-world audience data and listener responses submitted in this proceeding establishes that in fact Class A AM stations have significant listenership outside their respective 0.5 mV/m groundwave contours, both night and day. Nor may the Commission ignore the deleterious impact of the *SFNPRM* proposals on the critical role played by Class A AM stations in the nation's public safety and national security communications infrastructure.

The record here also establishes that the *SFNPRM* Class A AM proposals would result in massively more interference to currently-served listeners that overshadows in magnitude the small, and indeed, often miniscule, theoretical gains for non-Class A AM stations that would cause such interference via power increases. Moreover, these "gain areas" are often redundant as the non-Class A AM stations frequently already serve these areas – plus additional areas with

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AMRPA's Reply Comments, the bottom line, under either measure of interference, was the same disastrous result of an arm's race to obtain authority to install expensive facility improvements and/or increased power bills, merely to partially stave off encroaching signals, with the listening public being deluged with significantly more, not less, interference on the AM band.

larger populations – via authorized FM translators. Consequently, proposals to unduly restrict interference protections only to a Class A AM station's 0.5 mV/m groundwave contour (or even worse under Critical Hours Alternative 1) puts at risk the "bird in the hand" Class A AM listeners for theoretical "two in the bush" non-Class A AM stations; except the proverb's ratios must be re-calculated, as the potential listeners "in the bush" for power-increasing non-Class A AM stations would be a fraction of the existing listeners to be lost to new interference as demonstrated in the studies supplied by AMRPA.

In addition, AMRPA continues to oppose changing daytime interference protections for Class B, C and D AM stations to the 2 mV/m daytime contour, which AMRPA's prior submissions establish would have overall detrimental impacts for Class B, C and D AM stations, and consequently would be contrary to the public interest in preserving and revitalizing AM radio service.

Respectfully submitted,

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